CLAIMS

1. In an electronic device having an electrical circuit connected to live and neutral lines of an AC power supply via a bridge rectifier for the provision of DC power to the circuit, a method for ascertaining the AC power supply voltage, the method including providing a corrected voltage signal comprising a differential between signals representative of the live and neutral AC voltage signals, each signal referenced to a preselected common voltage reference point in the circuit of the device.

2. The method as claimed in claim 1, in which the reference point is a floating earth point of the circuit and the method includes the steps of

providing a first neutral error voltage signal representative of the voltage signal of the neutral line of the AC power supply with reference to the floating earth of the circuit;

providing a second live error voltage signal representative of the voltage signal of the live line of the AC power supply with reference to the floating earth of the circuit; and

subtracting the first error voltage signal from the second error voltage signal to provide the corrected voltage signal.

3. The method as claimed in claim 1, in which the reference point is a floating earth point of the circuit and the method includes the steps of

providing a first neutral error voltage signal representative of the voltage signal of the neutral line of the AC power supply with reference to the floating earth of the circuit;

providing a second live error voltage signal representative of the voltage signal of the live line of the AC power supply with reference to the floating earth of the circuit;

inverting the first error voltage signal; and

adding the inverted signal to the second error voltage signal to provide the corrected voltage signal.

4. The method as claimed in claim 3, in which the step of inverting the first error voltage signal is by means of an inverter.

5. The method as claimed in claim 4, in which the inverter comprises an amplifier with an amplification of minus one.

6. The method as claimed in claim 4 or claim 5, in which the bridge rectifier has a bridge rectifier circuit having first and second input nodes for connection respectively to live and neutral lines of the AC power supply and has positive and negative DC output nodes for connection to a load, and in which

the step of inverting the first error voltage signal comprises inverting the voltage signal measured between a neutral input node of the rectifier bridge circuit and the floating earth point of the device driven by the power supply (the neutral error voltage); and

the step of adding the inverted signal to the second error voltage signal to provide the corrected voltage signal comprises adding the inverted signal to the voltage signal measured between the live AC line and the floating earth of the device (the live error voltage).

7. The method as claimed in any one of the preceding claims, in which the device is an electricity consumption meter (power meter).

8. The method as claimed in claim 7, in the power meter is a current transformer meter.

9. In an electronic device having an electrical circuit connected to live and neutral lines of an AC power supply via a bridge rectifier for the provision of DC power to the circuit, a voltage ascertaining means operable to provide a voltage signal comprising a differential between voltage signals representative of the live and neutral AC voltage signals, each signal referenced to a preselected common voltage reference point in the circuit of the device.

10. The voltage ascertaining means as claimed in claim 9, in which the bridge rectifier includes a bridge rectifier circuit having first and second input nodes for connection respectively to live and neutral lines of an AC power supply and having positive and negative DC output nodes for connection to a load and in which the voltage ascertaining means includes an error compensation circuit operably connected to the bridge rectifier circuit.

11. The voltage ascertaining means as claimed in claim 10, in which the error compensation circuit includes

means for providing a first neutral error voltage signal representative of the voltage signal of the neutral line of the AC power supply with reference to the floating earth of the circuit;

means for providing a second live error voltage signal representative of the voltage signal of the live line of the AC power supply with reference to the floating earth of the circuit; and

subtraction means for subtracting the first error voltage signal from the second error voltage signal to provide the corrected voltage signal.

12. The voltage ascertaining means as claimed in claim 10, in which the error compensation circuit includes

means for providing a first neutral error voltage signal representative of the voltage signal of the neutral line of the AC power supply with reference to the floating earth of the circuit;

means for providing a second live error voltage signal representative of the voltage signal of the live line of the AC power supply with reference to the floating earth of the circuit;

inverting means for inverting the first error voltage signal; and

addition means for adding the inverted signal to the second error voltage signal to provide the corrected voltage signal.

13. The voltage ascertaining means as claimed in claim 12, in which the inverting means comprises an amplifier having an amplification of minus one.

14. The voltage ascertaining means as claimed in claim 13, in which the inverter is operable to invert the voltage signal measured between a neutral input node of the rectifier bridge circuit and the floating earth point of the device driven by the power supply (the neutral error voltage) and to add the inverted signal to the voltage signal measured between the live AC line and the floating earth of the device (the live error voltage).

15. The voltage ascertaining means as claimed in claim 14, in which

the error compensation circuit is operably connected to a power supply for providing power to an energy consumption meter (power meter) for the measurement of power use from an AC power source, the energy meter providing the load for the power supply and being connected to the output nodes of the bridge rectifier circuit via the error compensation circuit; and

the energy meter has a floating earth providing a reference for measuring the voltage of the AC signal to be metered, the error

compensation circuit compensating for an error in the AC voltage signal measured by the meter by adding an inverted error compensating signal to the voltage signal measured by the meter between its floating earth and the live line of the AC power supply.

16. The voltage ascertaining means as claimed in claim 11, in which

the error compensation circuit is operably connected to a power supply for providing power to an energy consumption meter (power meter) for the measurement of power use from an AC power source, the energy meter providing the load for the power supply and being connected to the output nodes of the bridge rectifier circuit via the error compensation circuit; and

the energy meter has a floating earth providing a reference for measuring the voltage of the AC signal to be metered, the error compensation circuit compensating for an error in the AC voltage signal measured by the meter by subtracting the error compensating signal from the voltage signal measured by the meter between its floating earth and the live line of the AC power supply.

17. The voltage ascertaining means as claimed in claim 15 or claim 16, in which the electricity consumption meter (power meter) is a current transformer meter.

18. A bridge power supply incorporating a voltage ascertaining means as claimed in any one of claims 9 to 17.

19. In an electronic device having an electrical circuit connected to live and neutral lines of an AC power supply via a bridge rectifier for the provision of DC power to the circuit, a method for ascertaining the AC power supply

voltage substantially as herein described with reference to the accompanying diagrammatic drawings.

20. In an electronic device having an electrical circuit connected to live and neutral lines of an AC power supply via a bridge rectifier for the provision of DC power to the circuit, a voltage ascertaining means substantially as herein described and illustrated with reference to the accompanying diagrammatic drawings.